COVER SHEET
Public Review Draft – June 2003

Title of Environmental Review:	Environmental Assessment to Analyze Impacts of a National Marine Fisheries Service Determination that the Imnaha River Subbasin Tribal Resource Management Plan Submitted by the Nez Perce Tribe Satisfies the Tribal Section 4(d) Rule and Does Not Appreciably Reduce the Likelihood of Survival and Recovery of Snake River Spring/Summer Chinook Salmon
Evolutionarily Significant Units:	Snake River Spring/Summer Chinook Salmon
Responsible Agency and Official:	D. Robert Lohn NOAA – National Marine Fisheries Service 7600 Sand Point Way N.E. Seattle, WA 98115
Contacts:	Herb Pollard Salmon Recovery Division NOAA – National Marine Fisheries Service 10215 W. Emerald, Suite 180 Boise, ID 83704 Phone: (208) 378-5614
Legal Mandate:	Endangered Species Act of 1973, as amended and implemented – 50 CFR Part 223
Location of Proposed Activities:	Idaho, Snake River Basin, Imnaha River subbasin
Activity Considered:	ESA determination regarding a Nez Perce Tribal Resource Management Plan for spring/summer chinook salmon in the Imnaha River in 2003, pursuant to the ESA Tribal 4(d) Rule

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1.0 Purpose Of and Need for the Proposed Action

1.1 Background

NOAA's National Marine Fisheries Service (NMFS) is the lead agency responsible for administering the ESA as it relates to listed salmon and steelhead. Actions that may affect listed species are reviewed by NMFS under section 7 or section 10 of the ESA or under section 4(d), which can be used to limit the take prohibition under section 9. NMFS issued a final Endangered Species Act (ESA) rule pursuant to section 4(d) (4(d) Rule), adopting regulations necessary and advisable to conserve threatened species (50 CFR 223.203). This 4(d) Rule applies the take prohibitions in section 9(a)(1) of the ESA, and also sets forth specific circumstances when the prohibitions will not apply, known as 4(d) limits. NMFS also issued a separate 4(d) Rule (50 CFR 223.209) describing the limitation of application of take prohibitions regarding activities carried out pursuant to a Tribal Resource Management Plan (TRMP). The section 4(d) rule regarding tribal resource management plans declares: "The United States has a unique relationship with tribal governments as set forth in the Constitution, treaties, statutes, and Executive orders." With regard to fisheries and resource management, NMFS declared, in the Tribal 4(d) rule, that section 9 take prohibitions would not apply to activities carried out under those Tribal plans deemed by the Secretary to not appreciably reduce the likelihood of survival and recovery of a listed ESU. The Nez Perce Tribe's (Tribe) TRMP is submitted pursuant to the Tribal 4(d) Rule.

In the review of a TRMP, NMFS must consider whether the Plan satisfactorily addresses the criteria contained in the ESA 4(d) Rule. If NMFS determines that the TRMP "...is not likely to appreciably reduce the likelihood of survival and recovery..." and otherwise satisfies the Tribal 4(d) Rule, then NMFS will publish that determination. NMFS' determination constitutes the federal action that is subject to analysis as required by the National Environmental Policy Act (NEPA).

NMFS seeks to consider, through NEPA analysis, how its pending action may affect the natural and physical environment and the relationship of people with that environment. NMFS is also required to review compliance of ESA actions with other applicable laws and regulations. The NEPA analysis provides an opportunity to consider, for example, how the action may affect conservation of non-listed species, socioeconomic objectives that seek to balance conservation with wise use of affected resources, and other legal and policy mandates. Of particular concern is whether pending actions are consistent with treaties and the associated federal treaty trust responsibilities, including the requirement to regulate Indian fisheries by the least restrictive means consistence with conservation needs. As stated in Secretarial Order 3206, American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act, NMFS is "... to ensure that Indian tribes do not bear a disproportionate burden for the conservation of listed species ..."

1.2 Description of the Proposed Action

The Tribe submitted a TRMP for management of chinook in the Imnaha River subbasin belonging to the Snake River spring/summer chinook Evolutionarily Significant Unit (ESU) for review under the Tribal 4(d) Rule.

The Federal action evaluated here is the proposed determination by the Secretary (through the Northwest Regional Administrator for NOAA's National Marine Fisheries Service (NMFS)) that the Tribe's TRMP does not appreciably reduce the likelihood of survival and recovery of the listed Snake River spring/summer chinook salmon ESU.

The TRMP describes management activities, including Tribal ceremonial and subsistence fisheries and non-tribal recreational fisheries, proposed to be implemented during the period May 1, 2003 through December 31, 2003. Activities identified in the TRMP include ceremonial and subsistence fisheries managed by the Tribe and recreational fisheries managed by the State of Oregon's Department of Fish and Wildlife (ODFW), co-managers of the resources in the Imnaha subbasin, which incorporate conditions for the conservation and restoration of salmon stocks. The plan also addresses the management strategies used by the Tribe and State to ensure attainment of natural spawning escapement objectives and operation of an experimental artificial propagation program subject to ESA section 10 (a)(1)(A) permit number 1128, which was issued on September 20, 2000.

Two alternatives are considered in this EA: (1) NMFS does not determine that the TRMP satisfies the criteria of the Tribal 4(d) Rule, and (2) NMFS determines that activities implemented as described in the TRMP would satisfy the Tribal 4(d) Rule. No other alternatives were found that were reasonable and/or appreciably different from these two alternatives (Section 2.0, Alternatives Including the Proposed Action).

1.3 Purpose Of and Need for the Action

The purpose of the proposed action is to implement Tribal ceremonial and subsistence fisheries and non-tribal recreational fisheries in the Imnaha River in 2003 and to comply with the requirements of the ESA, and specifically with the Tribal 4(d) Rule. The management of the proposed fisheries would be consistent with, and would take place within the greater context of, the existing artificial propagation program designed to manage the spring chinook salmon resources in the Imnaha River subbasin. The TRMP includes monitoring guidelines to assess the success of the programs and to ensure that the harvest program would not prevent the survival and recovery of ESA-listed salmon and steelhead.

The need for the proposed action is to conserve and enhance natural populations while meeting tribal trust responsibilities, providing tribal ceremonial and subsistence needs, and providing recreational fishery opportunities.

1.4 Action Area

The action area is the mainstem of the Imnaha River subbasin, an Oregon tributary of the Snake River. The proposed fisheries would take place in the Imnaha River from its confluence with the Snake River to 60 feet downstream of the Gumboot Creek weir, a distance of approximately 48 miles (Figure 1). The Tribal fishery would occur through the entire action area; the state-managed recreational fishery would occur between the river mouth and Summit Creek Bridge (approximately 38 miles).

The Imnaha River watershed is one of the smaller subbasins in the Snake River Basin. It consists of 534,814 acres, or about 836 square miles. Approximately 78 percent of the subbasin is classified as Wilderness, National Recreation Area, or other protective category (much of the rest is designated for timber harvest). The Imnaha subbasin lies within and adjacent to the Hells Canyon National Recreation Area. This Recreation Area provides an outstanding diversity of habitats for wildlife. This diversity is enhanced by the abrupt changes in vegetation resulting from changes in aspect, elevation, temperature, moisture, geology, soil depth, the effects of fire, and the management activities and influence of man. The natural physical characteristics of the Imnaha Subbasin have been altered by human-caused activities including timber harvest, road construction, water withdrawals, hydroelectric production, grazing, recreation, fires and fire management, flood and erosion control, powerlines, mining and activities on private land including livestock ranching (USFS 1998).

1.5 Scoping

The scope of the action considered here includes only activities that would occur under the Nez Perce TRMP in 2003. The TRMP implements elements of an existing NMFS section 10 permit and cooperative agreements between the Tribe and State (NMFS 2000). The effects of the artificial propagation program and supplementation of natural spawning portions of the action on the human environment have already been evaluated, and a Finding of No Significant Impact was issued (NMFS 1993). However, the conduct of Tribal ceremonial and subsistence fisheries and state recreational fisheries that might be implemented in 2003 associated with the artificial propagation program have not been evaluated.

1.6 Relationship to Other Plans and Policies

The Proposed Action analyzed in this EA relates to other plans and policies. Treaty trust responsibilities are discussed in subsection 1.1, Background. The management of the Imnaha River chinook hatchery program is detailed in section 10(a)(1)(A) permit 1128 (NMFS 2000), and annual operating plans developed by the state and Tribal co-managers (ODFW 2003a). Harvest management and dispute resolution between the State and Tribe is under the jurisdiction of *United States vs. Oregon*, the ongoing Federal court proceeding which deals with Tribal fishing rights on the Columbia River and major tributaries.

The Nez Perce Tribal Executive Committee is the elected body of Tribal members who carry out the mandates of the Tribal constitution and the treaty with the United States, including setting fishing regulations for tribal members and establishing management plans for tribal trust resources. The ODFW is the state agency charged with responsibility to protect fish and wildlife species and managing hunting and fishing. The ODFW consists of a seven-member citizen commission appointed by the Governor of the state, the director (appointed by the commission) and a statewide staff of 1000 permanent employees and operates under Oregon State law (ORS chapters 496 through 513). The Commission formulates general state programs and policies concerning management and conservation of fish and wildlife resources and establishes seasons, methods and bag limits for recreational and commercial take. The Department staff carries out Commission policy.

The Tribal Executive Committee and the ODFW are responsible for compliance of their decisions and actions with the state and Tribal constitutions, state, tribal, and Federal statutes, treaties, and court orders.

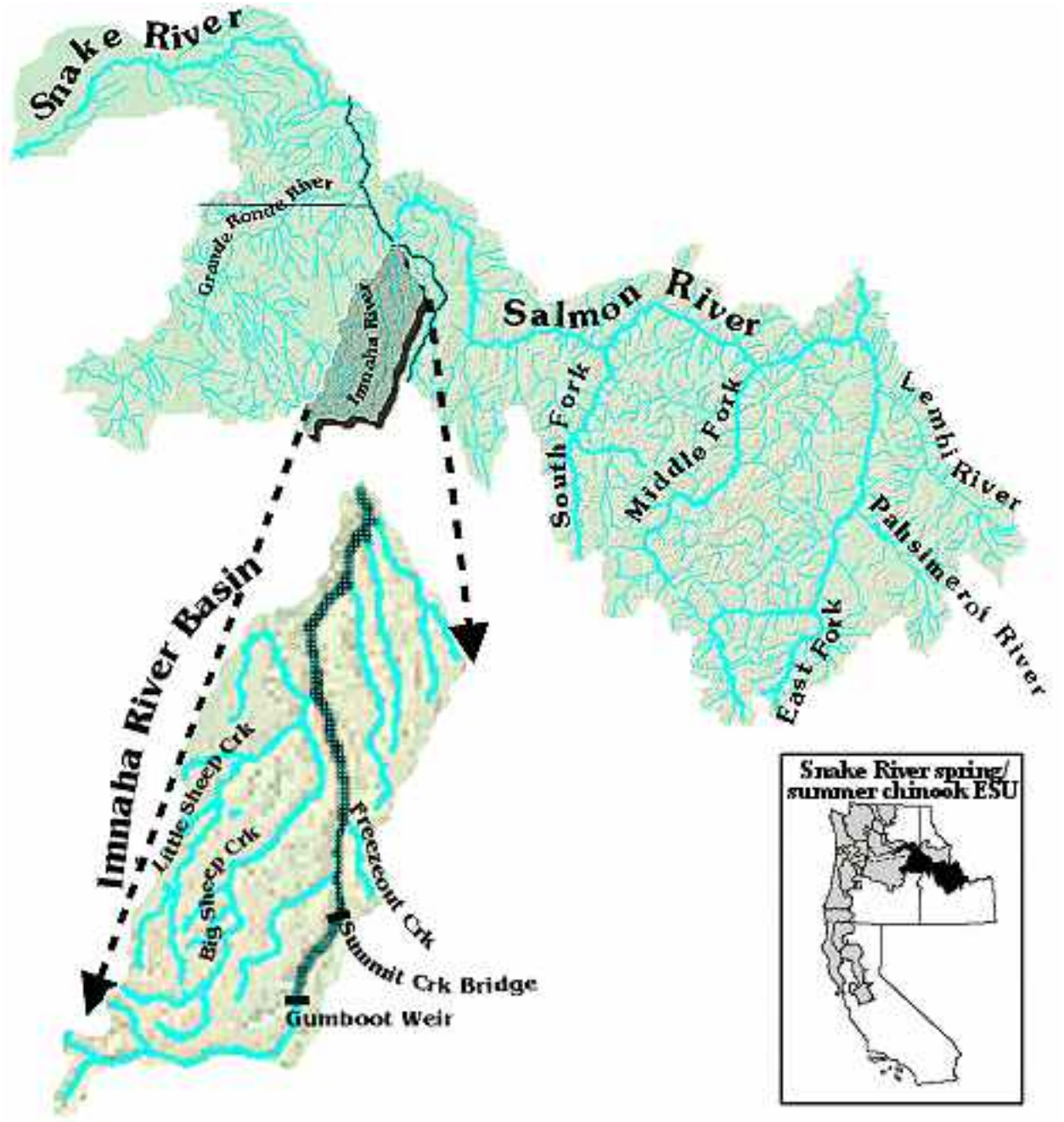
In addition, the Proposed Action is consistent with on-going ESA recovery planning. Recovery plans are being developed in most subbasins in the Columbia River system. These recovery plans will contain: (1) measurable goals for delisting, (2) a comprehensive list of the actions necessary to achieve delisting goals, and (3) an estimate of the cost and time required to carry out those actions. All factors that have been identified as leading to the decline of ESA-listed species will be addressed in these recovery plans. For ESA-listed salmon and steelhead, these factors include hydroelectric operations, harvest, habitat use, and artificial propagation. The TRMP describes harvest management actions integrated with broodstock management objectives in the Imnaha River subbasin.

The Proposed Action would also be consistent with the Basinwide Salmon Recovery Strategy, which was developed by the Federal government to restore ESA-listed salmon and steelhead throughout the Columbia River basin. The strategy outlines specific actions to be taken by the Federal government and proposes additional actions for tribal, state, and local governments. These actions include improving hatcheries, limiting salmon harvest, and restoring salmon habitat. For more details on the management of fishery harvest in recovery strategies, please see the Basin Wide Salmon Recovery Plan (Federal Caucus 2000).

2.0 Alternatives Including the Proposed Action

Alternatives considered in this EA are: (1) to not issue a determination that the fisheries implemented under the terms of the TRMP do not appreciably reduce the likelihood of survival and recovery of the listed fish (the No Action alternative); or (2) to issue such a determination. NMFS has evaluated the impacts of actions proposed in the TRMP with regards to the standards of the Tribal 4(d) Rule. No other alternatives were identified that would meet the purpose and need for the action (see section 2.3, Additional options considered but not analyzed in detail).

Figure 1. The geographic range of the Snake Basin spring/summer chinook salmon ESU, including the location of the Imnaha River subbasin and the area (generally the Imnaha River mainstem from the mouth to Gumboot weir) of the proposed tribal ceremonial and subsistence and state-managed non-tribal recreational fisheries proposed for 2003. See text for details on fishery dates and locations.



The following sections describe the proposed action and alternatives and evaluate the potential specific impacts of NMFS' proposed determination.

2.1 No Action Alternative: Do Not Issue Determination that Tribal Plan Satisfies Tribal 4(d) Rule

Under the Tribal 4(d) Rule, the Secretary considers a Tribal Resource Management Plan to determine whether implementation of the Plan would appreciably reduce the likelihood of survival and recovery of the listed salmonids that may be affected by the Plan. The alternative is for the Secretary to determine that the plan does not meet the criteria of the Tribal 4(d) Rule, in which case activities conducted under this plan would not qualify for the limitations on application of section 9 take prohibitions. This does not necessarily mean that those activities could not occur. Those activities authorized under the existing section 10 (a)(1)(A) permit 1128 would continue. Permit 1128 authorizes direct and incidental take of listed chinook salmon in actions related to the operation of the artificial propagation program, including collection of hatchery brood stock, releasing fish above the weir for natural spawning and relocation of adult salmon into suitable, but under-used, habitat within the Imnaha River subbasin to supplement natural spawning. Several other mechanisms exist that provide for evaluation of activities with respect to the ESA. However, such other options may not apply to the specific situation considered here, and likely could not be processed in time to address fishery activities proposed to begin in 2003. Tribal and recreational salmon fisheries likely would not occur in 2003. Recreational fishing for trout would continue under the state's general fishing regulations. For the purpose of this analysis, and because the outcome of other regulatory options would be speculative. NMFS treats the No Action alternative as resulting in no Tribal or recreational salmon fishing in the Imnaha River subbasin in 2003.

2.2 Proposed Action: Issue Determination that the Tribal Plan Satisfies Tribal 4(d) Rule

Implementation of the TRMP would assure that spawning escapements, hatchery brood stock requirements, and supplemental adult releases would be achieved in accordance with cooperative agreements. A cooperative agreement between the Tribe and State provides for non-Tribal members to share in harvest under the TRMP (NPT 2003b). Recreational chinook fisheries conducted by the State are coordinated with treaty Tribal fisheries, which may target the same species in the same water. The State-managed fisheries must conform to harvest share agreements with the tribes, and the total impacts of all Tribal and State fisheries are considered in setting annual take quotas. Fisheries managed pursuant to the TRMP would be limited to a 10 percent impact on the target population in a year of abundant returns that is estimated to allow a projected escapement of 1,378 adult naturally produced spring chinook after the fisheries. The 10 percent impact represents the total for both Tribal and State-managed non-tribal fisheries that are proposed to take place in the subbasin, consistent with the artificial propagation management plan and the terms of the TRMP.

2.2.1 Tribal Fishery Management

Tribal fishing regulations are set by the Nez Perce Tribal Executive Council for fisheries within Tribal authority. The development of regulations is based on the best scientific and commercial data available, including evaluating status of populations, annual surveys of fishing activity and harvest, and public input. Biological information and recommendations are developed by the Tribal Fisheries Management Department, and adoption by the Tribal Executive Council is conducted following the Tribe's established protocols.

Records indicate that in 2003, for the third consecutive year, the number and composition of returning chinook salmon in the Imnaha River subbasin will be sufficient to provide for a limited fishery in addition to meeting spawning and conservation goals. Fisheries activities and management agreements in future years will also be unique to those years, as interannual abundance and composition of salmon runs are highly variable. The TRMP addresses only the management of the Imnaha River population of the Snake River spring/summer chinook ESU, during the time that adults of this population are in the Imnaha River sub basin, in 2003. The TRMP describes the allocation of adult salmon among natural spawning, brood stock for an artificial propagation program designed to aid in recovery of this population, release of adult spawners into under-utilized spawning habitat within the Imnaha River subbasin, and harvest in Tribal ceremonial and subsistence and state-managed non-tribal recreational fisheries.

Salmon fishing opportunities are regulated on an annual basis, depending on counts and projections of returning adult salmon. Specific regulations for anadromous salmon, including time frame, duration, quotas, gear restrictions, and locations are set annually when dam counts and population trend data predict the return of a harvestable component. The specific conditions that apply to the fisheries proposed for the Imnaha River in 2003 have led to the development of the fishery proposals in the TRMP that is the subject of this assessment. In any future year that the Tribe proposes a fishery that may harvest listed chinook salmon, specific season dates, open fishing areas, catch quotas, limits, and other details of the fishery would be reviewed by NMFS for effects on listed species. The Tribal Executive Council has the authority to modify fishing rules in-season, including emergency closures.

2.2.2 Anticipated Dates and Duration of the Activity

The TRMP describes a harvest of approximately 418 salmon (jacks and adults combined), which is 10 percent of the total predicted return to the Imnaha River. The proposed Tribal fishing season extends from May 1 to July 31, or until the harvest number is achieved. Fishing gear permitted would include dip net, gaff, longbow, spear, and hook and line. All fish, jacks and adults alike, would count towards the harvest goal, and the fishery would target spring chinook salmon only; harvest of bull trout and steelhead would be prohibited. The fishery location would include the Imnaha River from its confluence with the Snake River to 60 feet downstream of the Gumboot Creek weir, a distance of approximately 48 miles (Figure 1). The fishery would target the peak of the Imnaha return, which, according to historic accounts and trap data from the Gumboot Creek weir, occurs at the mouth during the last two weeks in June, and further upstream at the weir in mid-July.

The proposed season for non-tribal fishers regulated by ODFW is from May 1 through June 30, between the river mouth and Summit Creek Bridge (approximately 38 miles)(ODFW 2003a). Chinook fisheries may be closed on short notice when in-season monitoring indicates that criteria for harvest share or incidental take limits are met.

The TRMP and this EA refer only to fishery management activities in waters of the Imnaha River subbasin, in 2003. The TRMP describes fishery activities in the context of brood stock collection, which occurs at the Gumboot Creek weir; natural spawning escapement, which occurs throughout the Imnaha River subbasin; release of adult salmon to supplement natural spawning in Big Sheep Creek, Lick Creek, and other Imnaha River tributaries; and fishing activities that occur in the mainstem of the Imnaha River downstream from the Gumboot Creek weir.

2.2.3 Measures to Minimize, Mitigate, and Monitor Impacts of Fisheries

The TRMP describes measures intended to minimize and mitigate impacts of the proposed activities to the maximum extent practicable. Historical records of migration and distribution have been used in designing fisheries.

2.2.3.1 *Fishery Management*

The proposed fisheries are described in the TRMP. The fisheries would be managed conservatively and would reflect the use of a scientifically based approach to fishery management designed to avoid excessive take of listed species and to comply with the standards of the Tribal 4(d) Rule. Fisheries described in the TRMP would only affect the Imnaha River subbasin population of the Snake River spring/summer chinook ESU and would be tiered to activities under ESA section 10 scientific research and enhancement permit number 1128 (see section 1.6, Relationship to Other Plans and Policies). The plan provides for education and enforcement and is consistent with the goals of both the enhancement program and the ongoing Federal court jurisdiction in *U.S. v. Oregon*.

2.2.3.2 *Accounting and Evaluation*

The Tribe participates in regional committees that develop and analyze estimates of the number and composition of annual spawning runs and calculate harvestable numbers of anadromous fish. Information on fish tags recovered from sampled fish and other biological samples are shared with the state co-managers and Federal agencies involved. Consultation on ESA issues with the Federal agencies is ongoing and includes annual and in-season reports of activities and harvest that are required by section 10 permits and the continuing jurisdiction of *U.S. v. Oregon* (see section 1.6, Relationship to Other Plans and Policies).

2.2.3.3 *Inseason Management*

The primary method for enumerating runs and determining the composition of anadromous fish runs that may be affected by the proposed fishery management activities proposed in the TRMP is the counting and biological sampling of fish as they migrate up the Columbia and Snake Rivers. Fish are physically counted and sampled as they pass the eight dams in the Federal Columbia River Power System. Once the salmon arrive in the Imnaha River subbasin, a large proportion, estimated by ODFW to average 65 percent, of the return is captured, enumerated, and sampled at a weir and fish trap located at the mouth of Gumboot Creek. The weir operation and sampling process is described in the permit application for the Imnaha River research and enhancement project (ODFW 1998), NMFS section 10(a)(1)(A) permit number 1128, which covers this activity (NMFS 2000), and the Annual Operating Plan jointly developed by the state and tribe (ODFW 2003a) (see section 1.6, Relationship to Other Plans and Policies). Additionally, the Tribal and State co-managers conduct spawning count surveys and other biological sampling of salmon distribution and production throughout the subbasin, and information from these activities would be used to monitor the status of the return and evaluate the on-going effects of the harvest. Index groups of salmon juveniles are marked with Passive Induced Transponder (PIT) tags and coded wire tags (CWT) which are then detected as the fish migrate to and from the ocean (PIT tags) and when the adult fish are collected at hatchery weirs, during spawning grounds surveys and in fishery harvests (both PIT and CWT tags). Analysis of tag recovery data provides important information about migration, return numbers and timing, and survival of the fish.

In 2003, pre-season projections of run size and composition indicate that there will be sufficient numbers of salmon returning to the Imnaha River to attain brood stock and spawning escapement goals and to support limited fishery harvest. Anadromous salmon fisheries may be evaluated by a variety of techniques that may include catch-card and telephone surveys, check stations, mandatory reporting, and roving creel census samples. Attempts are consistently made to update data and methodology to best represent the inseason progress of the run. The best available scientific and commercial data and methodology would be used in analyzing the resulting data.

Inseason estimates of fishing activity and harvest are shared with the Federal agencies and co-managers and adjustments are made when necessary. NMFS will reevaluate this determination if: (1) the anticipated incidental harvest and mortality of listed fish considered in the determination are exceeded; (2) the actions described by the TRMP are modified in a way that causes an effect on the listed species that was not previously considered in NMFS' evaluation; (3) new information or monitoring reveals effects that may affect listed species in a way not previously considered; or (4) a new species is listed or critical habitat is designated that may affect NMFS' evaluation of the TRMP.

2.2.3.4 *Funding*

Funding for Nez Perce Tribal fishery monitoring and impact assessment in the Columbia River comes from the Northwest Power Planning Council Fish and Wildlife Program and Tribal funds.

2.3 Additional Options Considered but not Analyzed in Detail

No other alternatives were identified that would achieve the purpose and need for this activity. Potential options generally include increasing the number of fish produced by the hatchery program (to increase the number of fish available for harvest), or to decrease the allowable level of harvest (to be more protective of the natural component of the return). However, the management program currently in place for the Imnaha River carefully balances a number of objectives and concerns, to the extent that options measurably outside the bounds of the program are likely to have inappropriate and adverse effects on the natural resources. The program is designed to enhance the naturally spawning population, with the concomitant effect that, under a variety of conditions of run size and run composition, fish surplus to management objectives would be available for other purposes. Increases in program production would exceed the objectives of the extant program plan and, in any case, would not result in increased returns during the 2003 season. Decreases in harvest as run sizes decrease are part of the proposed action – decreases in harvest despite relatively large run sizes are not required to achieve conservation objectives and therefore would not meet the purpose and need as stated.

3.0 Affected Environment

Both the No Action and Proposed Action alternatives can potentially affect the physical, biological, social, and economic resources within the proposed action area. Below is a summary of the major components of the environment that would be affected by these alternatives and the current baseline condition.

3.1.1 Riparian Habitat

Much of the riparian vegetation in the Imnaha River has been modified over time and shade is limited, except in the upper reaches (NPT *et al*. 1990). Bank instability in Little Sheep, Big Sheep, and Camp Creeks, and some portions of the mainstem, has resulted from overgrazing and stream channelization. The facilities such as access sites and campgrounds used in association with river fisheries are all in place and in use by fishermen seeking trout and other resident fish species.

3.1.2 Water Quality

While water quality in the Imnaha River has been impacted to an unknown degree by a variety of past and present land and water uses, these impacts are not likely a major factor limiting fish

production. Though some seasonal low flows due to irrigation diversions occur, flows are generally adequate during the adult salmonid migrations and smolt outmigrations. Feedlots located along Little Sheep Creek, Camp Creek, and the lower mainstem may be contributing to riparian degradation, streambank stability problems, and manure derived sediments (NPT *et al*. 1990). The actual degree to which the Imnaha River's water quality is being impacted is unknown. The use of fertilizers could also be having some adverse effect on water quality. Overgrazing has been a major problem in the past and continues to be a major problem at the feedlots.

Water quality is also affected by the presence of salmonid carcasses in the water, as a result of fish dying after spawning, or dying during unsuccessful upstream migration. Freshwater stream environments in the Pacific Northwest are generally cold and lacking in dissolved nutrients. Anadromous salmon are a major vector for transporting marine nutrients across ecosystem boundaries (i.e., from marine to freshwater and terrestrial ecosystems). Nutrients and biomass extracted from the decomposing carcasses, eggs and milt of spawning salmon restore the nutrients of aquatic ecosystems and stimulate biological production (Cederholm *et al.* 1999). Nutrients originating from salmon carcasses are also important to riparian plant growth. Direct consumption of salmon carcasses and secondary consumption of plants and small animals that are supported by carcasses are important sources of nutrition for both aquatic and terrestrial wildlife (Cederholm *et al*. 1999). Although decomposing salmon carcasses may cause temporary and localized appearances of compromised water quality, the nutrient cycling effect is vital to a fully functional ecosystem.

3.1.3 Anadromous Fish Listed Under the ESA

Since 1991, NMFS has identified 12 Evolutionarily Significant Units (ESUs) of Columbia River Basin salmon and steelhead as requiring protection under the ESA. Four of the listed ESUs originate in the Snake River basin. The ESUs expected to be impacted by fisheries evaluated in this EA and their current listing status are shown below. The ESA-listed populations often include some portion of artificially propagated fish as well as the wild/natural populations. Take prohibitions are in effect for Snake River spring/summer and fall chinook and sockeye salmon (57 FR 14653). Take prohibitions for the ESA-listed steelhead ESU were promulgated by a section 4(d) Rule published June 10, 2000.

Aspects of the life history pertinent to this analysis, described in greater detail below, include:

- seasonal distribution and migration, to determine the likelihood of the species' presence during the proposed fisheries, and
- abundance, to enable evaluation of likely impacts of the proposed fisheries on the continued prospects for survival and recovery of the species.

3.1.3.1 *Snake River Spring/Summer Chinook Salmon*

The Snake River spring/summer chinook salmon (*Oncorhynchus tshawytscha)* ESU was listed as threatened on April 22, 1992 (57 FR 14653). This ESU includes spring/summer chinook salmon in the Snake River and tributaries. It includes all natural populations and certain hatchery produced components of spring and summer chinook salmon populations in the mainstem Snake River and in the Tucannon River, Grand Ronde River, Imnaha River, and Salmon River subbasins. Spring/summer chinook salmon returning to hatchery programs and supplementation programs in the Clearwater River are excluded because the native stocks were extirpated by dams, and the current populations were reintroduced after the dams were removed (Matthews and Waples 1991).

Spring chinook salmon destined for the Snake River and tributaries begin entering the Columbia River in late February and early March. Their abundance downstream from Bonneville Dam peaks in April and early May. All chinook salmon passing Bonneville Dam from March through May are counted as upriver spring chinook salmon. All chinook salmon passing Bonneville Dam from June 1 through July 31 are counted as summer chinook salmon. These fish enter the Snake River approximately two weeks after crossing Bonneville Dam and distribute to the tributaries where they spawn in August and September.

Over the last three decades, between 1,000 and 45,000 naturally produced spring/summer chinook salmon have returned to the Snake River basin annually (Table 1). While the lowest returns have largely been in the last 10 years, the highest return since 1979 was an estimated 29,100 in 2002, as the result of good outmigration conditions and productive ocean conditions.

The Snake River spring/summer chinook salmon ESU consists of 39 local spawning populations (subpopulations) spread over a large geographic area (Lichatowich *et al*. 1993). The number of fish returning to Lower Granite Dam is therefore divided among these subpopulations. The relationships between these subpopulations, and particularly the degree to which individuals may intermix is unknown. It is unlikely that all 39 are independent populations per the definition in McElhany *et al*. (2000), which requires that each be isolated such that the exchange of individuals between populations does not substantially affect population dynamics or extinction risk over a 100-year time frame. Seven of these populations, including fish in the Imnaha River, have been used as index stocks for the purpose of analyzing extinction risk and alternative actions that may be taken to meet survival and recovery requirements.

The projected return of Snake River spring/summer chinook salmon in the Imnaha River for 2003 is 4,175 fish (53 percent hatchery origin and 37 percent natural origin) (Table 2). The projected escapement (after hatchery broodstock collection, adult outplanting, and planned fisheries) of 1,378 natural origin spring/summer chinook salmon in 2003 exceeds all but one of the past 13 years and is in the top 25 percent of escapements since 1957 (NPT 2003a).

Table 1. Estimates of natural-origin Snake River spring/summer chinook salmon counted at Lower Granite Dam 1979-2001 (Speaks 2000 and TAC 2003). The interim recovery escapement level for the ESU is from NMFS (1995).

Year	Spring Chinook	Summer Chinook	Total
1979	2,573	2,714	5,287
1980	3,478	2,404	5,882
1981	7,941	2,739	10,680
1982	7,117	3,531	10,648
1983	6,181	3,219	9,400
1984	3,199	4,229	7,428
1985	5,245	2,696	7,941
1986	6,895	2,684	9,579
1987	7,883	1,855	9,738
1988	8,581	1,807	10,388
1989	3,029	2,299	5,328
1990	3,216	3,342	6,558
1991	2,206	2,967	5,173
1992	11,134	441	11,575
1993	5,871	4,082	9,953
1994	1,416	183	1,599
1995	745	343	1,088
1996	1,358	1,916	3,274
1997	2,126	5,137	7,263
1998	5,089	2,913	8,002
1999	1,335	1,584	2,919
2000	8,049	846	8,895
2001	16,477	2,400	18,887
2002	24,300	4,800	29,100
2003[1]	13, 043	5,299	18,342
Interim Abundance Target			40,900

[1]Preseason estimate, March 15, 2003

Table 2. Projected returns of Snake River spring/summer chinook salmon in the Imnaha River in 2003 (ODFW 2003a).

	Adults	95% Confidence interval	Jacks	95% Confidence interval	Total
Hatchery origin	2,066	834 - 3,299	569	196-941	2,635
Natural origin	1,444	644 –2,246	96	41-105	1,540
Total	3,510	1,478-5,545	665	237– 1.091	4,175

Although numerical goals for viability determinations or for ESA recovery purposes have not been established for the Imnaha River population of spring chinook salmon, a number of escapement objectives have been presented:

- NMFS'1995 Proposed Recovery Plan for Snake River Salmon (NMFS 1995) suggested numerical recovery escapement goals for the Snake River spring/summer chinook salmon ESU as an 8-year geometric mean equal to 60 percent of the 1962-67 average Ice Harbor Dam escapement or 31,400 adult spring/summer chinook for the entire Snake River basin. The average escapement to the Imnaha River between 1962 and 1967 was approximately 1,172 fish (ODFW 2003a). The pre-1970 average redd counts for the Imnaha River, Big Sheep Creek, and Lick Creek trend areas was 321 redds (NMFS 1995). Applying the 60 percent factor from the proposed recovery plan would suggest an interim recovery level of approximately 700 naturally produced spawners, or a redd count of 193 in the index areas.

- The Columbia River Treaty Tribes' Tribal Recovery Plan (Wy-Kan-Ush-Mi Wa-Kish-Wit) (CRITFC 1995) proposes a total adult return goal of 5,740 fish, of which 3,800 are for natural production and 700 for harvest.

- Subbasin planning in 1990 produced a goal for the Imnaha subbasin of 5,770 total adult chinook salmon (3,820 for natural spawning, 1,240 for hatchery production, and 700 for harvest (NPT *et al*. 1990).

- In April 2002, NMFS published "Interim Abundance and Productivity Targets for Interior Columbia Basin Salmon and Steelhead Listed under the Endangered Species Act," which proposed an escapement level of 2,500 fish for the Imnaha River subbasin (Lohn 2002).

Until recovery planning efforts currently underway provide more refined assessments of abundance objectives, the escapement level of 2,500 will be used to assess progress toward recovery of spring/summer chinook salmon in the Imnaha River.

3.1.3.2 *Snake River Fall Chinook Salmon*

Snake River fall chinook salmon (*Oncorhynchus tshawytscha*) were listed as threatened on April 22, 1992 (57 FR 14653). This chinook salmon ESU includes all natural populations of fall-run chinook salmon in the mainstem Snake River and in the Tucannon River, Grande Ronde River, Imnaha River, Salmon River, and Clearwater River subbasins. Snake River fall chinook salmon enter the Snake River between late August and spawn in October through December. There will be no Snake River fall chinook salmon present in the action area during the proposed spring/summer chinook salmon fishery.

3.1.3.3 *Snake River Sockeye Salmon*

Snake River sockeye salmon (*Oncorhynchus nerka)* were listed as endangered on November 20, 1991 (56 FR 58619). This population remains only in Redfish Lake, at the headwaters of the Salmon River and in a captive broodstock program designed to restore natural spawning populations (Flagg and McCauley 1996). It is unlikely that any sockeye will occur in the Imnaha River during the proposed spring/summer chinook salmon fishery period.

3.1.3.4 *Snake River Steelhead*

Snake River Basin steelhead (*Oncorhynchus mykiss)* were listed as threatened on August 18, 1997 (62 FR 43937). This inland steelhead ESU occupies the Snake River Basin of southeast Washington, northeast Oregon, and Idaho (Busby *et al*. 1996).

Summer steelhead enter the Columbia River from March through October, with most of the run entering from late June through mid-September. The upriver steelhead run has historically been separated into A and B groups based on when the fish pass Bonneville Dam. Group A steelhead include fish that pass Bonneville Dam from late June through August 25 on their way to tributaries throughout the Columbia and Snake River Basins. Group B steelhead return to the Clearwater and Salmon Rivers in Idaho and pass Bonneville Dam from August 26 through October. Group B steelhead are generally larger than group A steelhead.

Upstream of Bonneville Dam, where groups mix as fish seek temporary refuge in cooler tributaries, Group A and B steelhead cannot be distinguished based on run timing. Steelhead counts at dams above Bonneville surge as mainstem water temperature declines in the fall. Counts peak at John Day, McNary, and the Snake River Dams in September and October. During years of above average September-October flows and lower temperatures, steelhead move readily past lower Snake River Dams during the fall counting period (June-December) and fewer fish are delayed until the spring count period (March-May). Snake River steelhead experience higher Bonneville-to-Lower Granite Dam survival rates in run years with lower spring count percentages.

It is unlikely that any pre-spawning steelhead adults will be passing through the fishery area at the time of the proposed fisheries. Steelhead spawn in the Imnaha River and its tributaries starting in March and continuing through May in some of the cooler tributaries at higher elevations. Any spawning steelhead should be upstream from the waters that are open to chinook salmon harvest during May. However, it is likely that some number of steelhead kelts (adults that have completed spawning) will be present in the proposed chinook salmon fishing areas during at least the early portion of the proposed open season. While most species of *Oncorhynchus* are semelparous (dying after spawning), steelhead are capable of spawning more than once (iteroparous). Across the full range of steelhead, the frequency of multiple spawning is variable. The frequency of multiple spawning is higher though still infrequent toward the southern end of steelhead range (Busby *et al.* 1996). In the Columbia River, between 89 and 97 percent of spawners in the lower river have not spawned previously. The incidence of repeat spawning in the Imnaha River, which is some 600 miles from the ocean and upstream of 8 large hydroelectric dams, is so low as to be undetected. Therefore, the potential contribution of repeat spawners to the survival and recovery of listed steelhead in the Imnaha River is negligible or nonexistent.

3.1.4 Other Fish Species Listed Under the ESA

Bull trout (*Salvelinus confluentus*) could be present in the areas where the fisheries are proposed to occur. The Columbia River population segment of bull trout was listed as threatened by the U.S. Fish and Wildlife Service in 1998 (63 FR 31647). Bull trout populations are known to exhibit four distinct life history forms: resident, fluvial, adfluvial, and anadromous. Resident bull trout spend their entire life cycle in the same (or nearby) streams in which they were hatched. Fluvial and adfluvial populations spawn in tributary streams where the young rear from 1 to 4 years before migrating to either a lake (adfluvial) system or a river (fluvial) system, where they grow to maturity. Anadromous fish spawn in tributary streams, with major growth and maturation occurring in salt water.

Migratory bull trout have been restricted or eliminated due to stream habitat alterations, including seasonal or permanent obstructions, detrimental changes in water quality, increased temperatures, and the alteration of natural stream flow patterns. The disruption of migratory corridors, if severe enough, will result in the loss of migratory life history types and isolate resident forms from interacting with the metapopulation. The Columbia River population segment encompasses a vast geographic area including portions of Idaho, Montana, Oregon, Washington, and British Columbia. Bull trout are present, and locally common, in most of the habitat occupied by anadromous fish in the Snake River basin, including the Imnaha River subbasin.

3.1.5 Non-listed Fish Species

Approximately 60 other species of fish live in the Snake River and tributaries. About half are native species primarily of the families *Salmonidae, Catastomidae, Cyprinidae*, and *Cottidae.*

White sturgeon*, Acipenser transmontanus,* occur in the main Snake and Salmon Rivers. The Snake River basin also supports at least 25 introduced species primarily representing the taxonomic families *Percidae, Centrarchidae*, and *Ictaluridae.* Most of the introduced species are game fish which may be the targets of fisheries that could incidentally take listed anadromous salmonids (Simpson and Wallace 1978). These other fisheries are not included in the TRMP and so are not considered as part of the proposed action.

3.1.6 Terrestrial Organisms

The diverse habitats in the Imnaha River subbasin support a spectrum of terrestrial organisms including neotropical birds, small mammals, fur bearers, and larger mammals including whitetail and mule deer, elk, and black bears. Approximately 381 wildlife species occupy the Hells Canyon National Recreation Area (fish – 42, salamanders – 3, frogs/toads – 9, lizards – 9, snakes – 10, birds – 239, mammals – 69), and most of these species are likely to occur within the Imnaha River watershed (USFS 1998).

3.1.7 Social and Economic Resources

Ceremonial and subsistence fishing for salmon was a central aspect of the culture and economic life of native American Indians in the Columbia River basin for more than 10,000 years before the arrival of the first European settlers. The Imnaha River subbasin lies within the lands ceded to the United States by the Nez Perce Tribe in a treaty with the Unites States in 1855. The treaties of 1855 and 1863 reserved fishing rights to the Tribe in the usual and accustomed places of fishing, including the Imnaha River and tributaries. However, as salmon runs have declined, the Tribal fishery managers have recommended restricted or closed fisheries to protect the remaining resource.

The early history of non-Indian use of fishery resources in the Columbia River Basin is described in Craig and Hacker (1940). Early traders, trappers, and settlers began arriving around 1800. These early immigrants began taking salmon for their own use and consumption, often trading for fish with the Indians. Early attempts at commercial taking of salmon began in 1829, with salmon harvest as a commercial industry beginning in earnest by the mid-1880s. The first cannery on the Columbia River produced its first pack of canned salmon in 1866. By 1887, the number of canneries in the basin peaked at 39 (Craig and Hacker 1940). Salting, mild-curing, and other methods of salmon preparation were also taking place, and Columbia River salmon were becoming well-known internationally. The total production of canned, mild-cured, and frozen salmon and steelhead in the Columbia River Basin rose from 272,000 pounds in 1886 to annual productions between 20 and 50 million pounds from 1874 through 1936 (Craig and Hacker 1940).

Commercial fishing had a very brief life in the Snake River drainage as salmon resources were exploited to feed miners and emigrants before 1900 (Evermann 1896). Rapid depletion of stocks

by downriver fisheries and habitat loss ended commercial fishing opportunity in the early part of the 20th century.

There has been recreational fishing in the Columbia River and its tributaries since the late 1800s. After the brief commercial fishery in the Snake River, non-tribal subsistence fishing rapidly evolved into recreational fishing. When Snake River Basin anadromous fish populations were abundant and productive there were no apparent conflicts between the conduct of recreational fisheries and the health of anadromous populations. Runs of salmon and steelhead remained healthy in the 1950s and 1960s, and supported recreational harvest rates of 30-50 percent. However, as human populations increased in the Snake River basin, fishing pressure increased and the productivity of anadromous populations began to decrease, restrictions on recreational fishing were instituted.

Because harvest due to recreational fishing is an obvious and visible cause of fish mortality, it is often the first potential factor of decline subject to restriction. Shorter fishing seasons, restricted harvest limits, and closed seasons were implemented to reduce the impacts of recreational fishing on wild anadromous fish, starting in the 1950s and 1960s as spawning runs began to decline. Treaty tribal fisheries in tributary areas have also been restricted or closed as salmon populations have declined and have become listed under the ESA. Harvest rates are managed at conservative levels until improvements in other sectors of the environment are able to take effect.

Recreational, ceremonial, and subsistence fishing at the level proposed in the TRMP are not important factors of decline for the Imnaha River spring/summer chinook population. Snake River spring/summer chinook populations are affected by habitat conditions, migration conditions, and survival in the ocean. A combination of favorable circumstances in these areas, and an artificial propagation program designed to supplement the naturally-produced population, has generated an abundance of salmon in 2003, which can provide for spawning escapement and brood stock needs and provide controlled fishing opportunity.

Recreational activities within the Imnaha watershed, in addition to fishing, include hunting, hiking and camping, firewood, berry and mushroom gathering, trail riding on horses, mountain bikes and off-road vehicles, and non-consumptive observation of wildlife and scenery.

In 1996, 483,459 anglers spent over 4,411,000 angler days fishing in Idaho waters (Maharaj and Carpenter 1997). Angler expenditures of about $280,000,000 generated an economic output of over $461,682,000 and $116,552,000 in worker earnings. These wages and salaries translate into 6,884 full-time equivalent jobs (Maharaj and Carpenter 1997). Recreational fisheries in the Oregon portion of the Snake River basin would be expected to have similar economic value. The average in the Mararaj report is about $63 per angler/day in direct expenditures, $105 per day in economic output, and $27 per day in worker earnings. The recreational salmon fishery on the Imnaha River in 2001 and 2002 consisted of about 750 angler/days to harvest between 100 and 200 fish (ODFW 2003a). That is similar to the proposed fishery in 2003. While 750 angler days only represents a direct expenditure of $47,250, $78,750 in economic output or $20,250 in

worker earnings, that could be a substantial contribution to economic activity for a small isolated community like the town of Imnaha which is near to where most of the fishing occurs. Tribal fishers are generally fewer in number and more effective than recreational anglers, and therefore spend fewer days fishing. However, although the economic contribution of the tribal fishery is likely smaller than the non-tribal recreational fishery, fuel, food and equipment purchases occur at local retail vendors.

Recreational anglers buy fishing licenses ($20.50 per year for Oregon residents, $8.25 per day or $48.00 per year for non-residents) and salmon permits ($10.50 per year) which support fishery management and law enforcement activities. Anglers also pay a Federal excise tax on fishing gear which is returned to the states to support fisheries research, development, and public information actions (ODFW 2003b).

3.1.8 Environmental Justice

Executive Order 12898 (59 FR 7629) states that Federal agencies shall identify and address, as appropriate "…disproportionately high and adverse human health or environmental effects of [their] programs, policies and activities on minority populations and low-income populations…." While there are many economic, social, and cultural elements that influence the viability and location of such populations and their communities, certainly the development, implementation and enforcement of environmental laws, regulations and policies can have impacts. Therefore, Federal agencies, including NMFS, must ensure fair treatment, equal protection and meaningful involvement for minority populations and low-income populations as they develop and apply the laws under their jurisdiction.

In the analysis area, there are minority and low income populations that this Executive Order could apply to, including a Native American Indian tribes. This Tribe is the Nez Perce Tribe. The proposed action includes the management of fishery harvest by the Nez Perce Tribe, to provide for ceremonial and subsistence harvest opportunity specifically for Tribal members, within the context of Tribal jurisdiction and authority. See section 3.5, below, for more information.

The State-managed non-tribal fishery is open to all state residents and non-residents, under State law, as described in section 1.6, Relationship to Other Plans and Policies. Implementation of the concurrent recreational fisheries conducted by the State is intended to be consistent with the Executive Order 12692 on Recreational Fisheries and the NMFS policy on recreational fisheries.

Section 3.1.7, Social and Economic Resources, provides further information.

3.1.9 Tribal Trust Responsibilities and Treaty Rights

The section 4(d) rule regarding tribal resource management plans, published July 10, 2000 declares: "The United States has a unique relationship with tribal governments as set forth in the

Constitution, treaties, statutes, and Executive orders." In keeping with this unique relationship and with the mandates of the Presidential Memorandum on Government to Government relations With Native American Tribal Governments (59 FR 22951) and with Executive Order 13084 , NMFS developed and published the referenced rule. Recognizing the unique status of the Treaty Tribes, the Federal Government stated, in the explanatory material accompanying the rule, that the appropriate expression of its trust obligation is a commitment to harmonize its many statutory responsibilities with the tribal exercise of tribal sovereignty, tribal rights, and tribal self determination.

With regard to fisheries and fish management, NMFS declared, in the Tribal 4(d) rule, that additional Federal protections are not needed for activities carried out under those Tribal plans deemed by the Secretary to not appreciably reduce the likelihood of survival and recovery of a listed ESU. Therefore, implementation of the Tribal fisheries proposed in the TRMP is consistent with the reserved fishing rights provided by the treaties, the intent of the Tribal 4(d) Rule, Secretarial Order 3206 on Treaty Rights, and the continuing jurisdiction of Federal court under *U.S. v. Oregon*.

4.0 Environmental Consequences

This section of the assessment evaluates the potential effects of the alternatives (including the proposed action) on the biological, physical, and human environments. The Secretary's determination whether the TRMP does or does not appreciably reduce the likelihood of survival and recovery of the listed species could affect a variety of natural and human resources. These effects would be primarily indirect effects of the determination, occurring as a result of implementation of activities described in the TRMP.

4.1 No Action Alternative: Do Not Issue Determination that Tribal Plan Satisfies Tribal 4(d) Rule

If the NMFS determines that the TRMP does not satisfy the terms of the tribal 4(d) Rule, then no limitation of the take prohibitions would be available for fishery activities described in the TRMP. Only those activities authorized under the existing section 10 (a)(1)(A) permit 1128 would continue. Permit 1128 authorizes direct and incidental take of listed chinook salmon in actions related to the operation of the artificial propagation program, including collection of hatchery brood stock, releasing fish above the weir for natural spawning and relocation of adult salmon into suitable, but under-used, habitat within the Imnaha River subbasin to supplement natural spawning. Tribal and recreational salmon fisheries would not occur in 2003. Recreational fishing for trout would continue under the state's general fishing regulations.

4.1.1 Effects on Riparian Habitat

Because the facilities and access points that would be used by chinook salmon fishers are already in place, and because other recreational activities are likely to occur, riparian and stream habitat

would be adversely impacted to some degree even in the absence of the chinook salmon fisheries. Fishers seeking trout and other resident fish species will have temporary and low level effects on the riparian area, as will camping and non-consumptive observation of wildlife and scenery.

4.1.2 Effects on Water Quality

The absence of salmon fisheries in the action area would not have a measurable effect on water quality. As with riparian habitat, water quality will continue to be affected by other activities in the subbasin, including recreational and commercial activities not associated with chinook salmon fisheries. Approximately 418 chinook salmon that would have been taken in fisheries would instead die in the stream, before or after spawning, and so would contribute additional nutrients to the system, but this number of fish is a relatively small proportion of the total return. Some of these additional fish would reach the Gumboot weir and be removed and would not contribute nutrients to the system.

4.1.3 Effects on Anadromous Fish Listed Under the ESA

The inability to conduct the fisheries contemplated in the TRMP would result in no more than a small increase in escapements for these populations and no measurable benefit to the conservation of ESA-listed salmon and steelhead. The preseason expectation is for 2,635 hatchery fish and 1,540 naturally produced fish to return to the Imnaha River in 2003 (Table 2). Based on the TRMP and consistent with the sliding scale management strategy developed by the *U.S. v. Oregon* parties, approximately 944 naturally produced and 1,498 hatchery adult spring/summer chinook salmon would be expected to reach the Gumboot weir; after collection for broodstock and for outplanting to other streams, 870 naturally produced salmon and an equal number of hatchery fish would be released to spawn upstream of the weir. In addition, approximately 508 naturally produced and 807 hatchery spring/summer chinook salmon would be expected to spawn in the Imnaha River and tributaries downstream of the weir. This is a total of 1,378 naturally produced fish that would be expected to spawn naturally in the Imnaha River system if not harvested, or approximately 60 percent of the interim abundance target of 2,500 fish.

Upstream of the weir, half of the anticipated spring/summer chinook salmon spawners would be of hatchery origin, while below the weir about 60 percent would be hatchery-origin. Removing fish that are in excess of program needs and natural population targets is a key component of the artificial propagation management program. Escapements past the weir can be controlled through removal of fish at the weir, but fish returning to areas below the weir can only be removed through fisheries. Under the No Action Alternative, proportions of hatchery-origin fish in the natural spawning population would likely exceed the objectives of the co-managers' management strategy for Snake River spring/summer chinook salmon in the Imnaha River subbasin.

There would be no effect on fall chinook salmon, sockeye salmon, or steelhead as a result of not conducting the proposed harvest.

4.1.4 Effects on Other Fish Species Listed Under the ESA

Not implementing the proposed fisheries would have a negligible role in reducing adverse impacts on bull trout. Some bull trout would continue to be caught-and-released by anglers fishing under the general trout regulations in Oregon. Other ESA-listed fish species would not be present in the area during the proposed fisheries, and so would not be affected by the absence of the fisheries.

4.1.5 Effects on Non-listed Fish Species

Fishing for resident species including trout would continue under the state's general fishing regulations (ODFW 2003b). The general trout season in streams extends from the Saturday of Memorial Day weekend through October 31 each year. The daily trout limit is 5 fish with an 8-inch minimum length. The 8-inch minimum length is designed to allow juvenile steelhead to become smolts before they are recruited to the trout fishery and to protect resident juvenile trout until they are two or three years old. These regulations would remain in effect whatever the determination on the proposed action, as they are not part of the TRMP. The mainstem of the Imnaha River downstream from Big Sheep Creek is further restricted to only harvest of rainbow trout with clipped adipose fins, further protecting wild rainbow trout and focusing harvest on hatchery-origin steelhead smolts that have failed to emigrate. Angler access to much of the Imnaha River and tributaries is restricted by rugged terrain and private land. While a popular fishery for resident trout exists in the Imnaha River drainage, most of the harvest is localized at campgrounds and access areas and the fishing regulations have been developed to manage harvest levels at a rate expected to have no affect at the population level.

4.1.6 Effects on Terrestrial Organisms

As discussed above, the absence of salmon fisheries may have a small and unmeasurable beneficial affect on the number of salmon carcasses available for consumption by terrestrial organisms and for contributing nutrients to the aquatic and terrestrial ecosystems of the Imnaha River subbasin. Terrestrial organisms would continue to be adversely impacted as a result of anticipated resident fisheries, camping, and observation of wildlife and scenery, although to a somewhat smaller degree than if salmon fisheries occurred.

4.1.7 Effects on Social and Economic Resources

While the level of fisheries proposed in the TRMP are relatively small in the context of similar activities in the region, they have meaning to the Tribal and non-tribal communities in the local area. Not issuing a determination providing for implementation of the TRMP would adversely affect the cultural and religious environment of members the Nez Perce Tribe who desire to

exercise treaty fishing rights in the Imnaha River subbasin. The Tribal fishers who have a tradition of fishing the Imnaha River in conjunction with family traditions or Tribal celebrations do not have an equivalent alternative. Although the harvest may be small, it has cultural value.

In addition, this alternative would result in economic losses to local communities and diminished quality of life for local fishermen near the Imnaha River, due to the curtailment of Tribal fisheries and non-tribal recreational fisheries. Local area businesses would be impacted to some extent through loss of customers. The community of Imnaha is isolated, and there is no other fishery equivalent to the salmon fishery in its attraction for anglers and new business. There are no similar fisheries for recreational anglers within more than 100 miles and, like the Tribal fishers who fish the Imnaha River in conjunction with family traditions or Tribal celebrations, non-tribal anglers in Imnaha and other Northeast Oregon communities do not have an easily available alternative, a circumstance that makes the limited angling opportunity and small harvest important disproportionately to the number of fish harvested.

Recreational fishery constraints would result in reduced state revenues from license sales and loss of recreational fishermen. Some of the 750 angler/days of effort that occurred in 2001 and 2002 might not be lost under the No Action alternative, as fishers might shift to another species, but it is likely that a majority of that effort would not occur. In that case, again assuming 2001-2002 average figures, most or nearly all of the nearly $150,000 in direct and associated revenue would not be generated if the chinook salmon fisheries did not occur. In addition, it is likely that fewer state fishing licenses would be purchased, although the reduction would be only a portion of all state licenses. At this time, most of the public information and law enforcement activity that protects listed species and keeps the public aware of the status of listed species is funded by the state, using fishing license fee revenues. Most of the public opinion that supports restoration of anadromous species and protection of critical habitat is generated by anglers and recreational fishing organizations. Loss of fishermen and their expenditure for fishing would have adverse impacts on retail and recreation industries, including sporting goods retailers, food and lodging providers, and fishing guide services, although the extent to which these industries would be affected within the context of the state and regional economies is not large.

The No Action alternative would be contrary to federal policy direction to promote compatibility and reduce conflict between administration of the ESA and recreational fisheries (June 3, 1996, 61 FR 27978). Given the analysis above and in the Evaluation and Determination document, the proposed fisheries are not expected to have a large impact on the number of listed fish returning to the Imnaha River in 2003. Therefore this alternative is not biologically necessary or advisable. This alternative would result in limiting access to harvestable surpluses of hatchery-produced salmon that are returning to specific artificial propagation facilities and release sites. The goals of the scientific research and enhancement project that has developed the artificial propagation program and supplementation of natural spawning in the Imnaha River subbasin include the restoration of traditional treaty fisheries and recreational fisheries. The No Action alternative would deny the validity of the scientific resource management techniques that have been applied to increase fishing opportunity. The potential social and economic benefits of expanded fishing

opportunity would be denied to local cultures and economies that depend upon fishing opportunities in the proposed action area. While the monetary amount is unclear, monetary and aesthetic benefits would be lost by the economy and culture of small rural communities in the Imnaha River basin under the No Action alternative.

4.1.8 Environmental Justice

Under the No Action alternative, fishing opportunities would be lost. Tribal harvest and subsistence fishing opportunities and potential fishing opportunities for low-income persons could be lost, but these populations would not be disproportionately affected by the No Action alternative because other communities would lose the same fishing opportunities.

4.1.9 Tribal Trust Responsibilities and Treaty Rights

The no-action alternative would have the effect of not allowing a Tribal ceremonial and subsistence salmon fishery and would not be consistent with the Federal Government's Treaty Trust Responsibility and the Tribe's treaty rights as described in sections 1.1 and 3.4.

4.2 Proposed Action: Issue Determination that the Tribal Plan Satisfies Tribal 4(d) Rule

4.2.1 Effects on Riparian Habitat

The effect of the proposed action on the riparian area of the action area would not be markedly different from the no-action alternative. Impact of the activities described by the TRMP on the habitat of the ESA-listed species is expected to be minor and temporary disturbance of riparian vegetation from fishers walking along the river. The fishing activities will occur in the main stem of the Imnaha River along the banks. Fisherman access to the riparian areas will be at existing access sites. Most fishing activity will take place downstream from the major spawning areas. Primary spawning and rearing habitat of the ESA-listed stocks lie in the upper river and tributary subbasins that are not open to fishing under either Tribal or State regulations.

4.2.2 Effects on Water Quality

The proposed action is not expected to have any effects on water quality beyond those of the No Action alternative. The proposed salmon fisheries are only a single component of the variety of recreational activities taking place in the subbasin, and streamside use and wading would be expected to have only a local and transitory effect on water quality.

4.2.3 Effects on Anadromous Fish Listed under the ESA

4.2.3.1 Snake River spring/summer chinook salmon

Unlike conditions under the No Action alternative, the expected adverse impacts on threatened Snake River spring/summer chinook in the Imnaha River subbasin from the fishery management actions proposed under the TRMP in 2003 would accrue directly from take in the fisheries, whether from kept catch or as incidental mortality resulting from catch and release.

The take levels are described in the TRMP (NPT 2003a), and summarized in Table 3. The anticipated level of adult escapement for 2003 is sufficient to meet natural spawner and hatchery broodstock goals as well as support limited harvest. Table 3 summarizes the allocation among spawning escapements, hatchery brood stock and harvest proposed for 2003. Compared to the No Action alternative, a total of 418 spring/summer chinook salmon would be harvested from the Imnaha River in 2003 by the proposed fisheries under current return expectations. The projected escapement (after hatchery broodstock collection, adult outplanting, and planned fisheries) of 1,378 natural origin spring/summer chinook salmon in 2003 exceeds all but one of the past 13 years and is in the top 25 percent of escapements since 1957 (NPT 2003a). The total estimated escapement of hatchery and naturally-produced salmon for natural spawning in 2003 is 3,513 fish. The proposed action would not cause a downturn in the abundance trend over recent years.

Table 3. Distribution of Snake River spring/summer chinook salmon returning to the Imnaha River in 2003 (includes jacks and adults).

Area	**Natural**	**Hatchery**	**Total**
To river mouth	1,540	2,635	4,175
Harvest	88	330	418
Number of fish post harvest	1,452	2,305	3,757
To weir (65% of post harvest return)	944	1,498	2,442
Hatchery broodstock	74	170	244
Outplant to Big Sheep and Lick Cr.	0	300	300
Spawning upstream of weir[1]	870	1,028	1,898
Spawning downstream of weir (35% of post harvest return)	508	807	1,315
Total natural spawning (mainstem and tributaries)	1,378	2,135	3,513

[1] Two additional criteria from the TRMP and management agreements are likely to reduce the number of hatchery-origin spawners above the weir: first, the proportion of hatchery-origin fish released above the weir is not to exceed 50 percent and second, no more than 10 percent of the male salmon released above the weir may be hatchery-origin jacks. Excess jacks or adults may be added to the Big Sheep Creek release.

In addition to evaluating whether escapement and broodstock objectives would be met if fisheries were implemented, it is pertinent to consider the effect of hatchery-origin fish in natural spawning areas, and how that proportion would be managed. The management agreement for

brood stock and natural spawning escapements calls for no more than a 1:1 ratio of natural to hatchery-produced fish spawning in the area above the Imnaha River weir. The TRMP estimates that after removal of a portion of the hatchery fish in the fishery, collection of 170 hatchery-produced fish for continuing hatchery production, and relocation of 300 hatchery fish to Big Sheep Creek and Lick Creek, there would be 870 naturally produced fish and 1,028 hatchery produced fish available to release above the weir. However, two additional criteria from the co-manager agreements, as outlined in the TRMP, are likely to reduce the number of hatchery-origin spawners above the weir: first, the proportion of hatchery-origin fish released above the weir is not to exceed 50 percent and, second, no more than 10 percent of the male salmon released above the weir may be hatchery-origin jacks. Excess jacks or adults may be added to the Big Sheep Creek release, achieving the desired 1:1 ratio and a total spawning escapement of 1,740 fish above the weir.

4.2.3.2 *Snake River Fall Chinook Salmon*

No Snake River fall chinook salmon are expected to occur in the Imnaha River during the time that fisheries are proposed for spring/summer chinook salmon. Therefore, there would be no effects of the fishery on this listed species, and effects under this alternative would be no different than under the No Action alternative.

4.2.3.3 Snake River Sockeye Salmon

No Snake River sockeye salmon are expected to occur in the Imnaha River during the time that fisheries are proposed for spring/summer chinook salmon. Therefore, there would be no effects of the fishery on this listed species, and effects under this alternative would be no different than under the No Action alternative.

4.2.3.4 Snake River Basin Steelhead

No adults steelhead spawners are likely to be affected by the proposed action. As described in section 3, above, steelhead spawning occurs high in the Imnaha River subbasin, upstream of the proposed fishery area, and spawners will have already passed upstream of the fisheries before the fisheries would start. Some post-spawning steelhead kelts could occur in the fishing area during at least the early part of the fishing season and could possibly be incidentally caught by fishers seeking salmon. Regulations for both the Tribal and state-operated fisheries prohibit retention of steelhead kelts. Steelhead kelts are not expected to be killed by fishing activities, but if some small number of kelts are caught and released, and a small proportion of those kelts die as a result, no measurable adverse effect on the population is expected. The number of kelts encountered would be small, the proportion dying as a result of catch and release would be even smaller, and the contribution of kelts to subsequent spawning is small or negligible. The effect of the proposed action would be essentially the same as under the No Action alternative.

4.2.4 Effects on Other Fish Species Listed Under the ESA

Impacts on threatened bull trout are expected to be negligible. A few more bull trout will be handled by salmon fishermen than under the No Action alternative. This species is likely to be

present in the portion of the Imnaha River that is open to the fisheries considered under this EA. In reviewing the status of bull trout, the USFWS determined that the Tribal and State wildlife conservation and fishing regulations that protect bull trout as well as wild trout of other species and listed anadromous salmonids were adequately protective (June 10, 1998; 63 FR 31647). The activities described in the TRMP are consistent with the objective of ensuring minimal impact to bull trout.

4.2.5 Effects on Non-listed Fish Species

Fisheries managed pursuant to the proposed TRMP are not expected to have effects on fish species other than the chinook salmon population that is the subject of all the management actions described. Other fish species may be caught in fisheries in the Imnaha River, but those fisheries are not included in the TRMP. The TRMP describes only those fisheries directed at harvest of chinook salmon, and the fishing methods and gear used are not likely to result in incidental catch of non-salmonid species. Effects of the proposed action on these other fish species would be no different than under the No Action alternative.

4.2.6 Effects on Terrestrial Organisms

Activities described in the proposed TRMP are not expected to have any effects on terrestrial organisms. No terrestrial organisms would be taken by efforts to harvest salmon. Conduct of the activities described by the TRMP are not likely to result in measurable effects on the terrestrial environment. Increases in streamside traffic, camping, and fishing effort associated with the proposed fisheries would be small, using existing facilities. The impacts on terrestrial organisms resulting from a few hundred additional visits by Tribal and recreational fishers to the river and riparian area *are not expected to differ substantively from those under the No Action alternative*, due to the background of other recreational activities and land use in the watershed.

4.2.7 Effects on Social and Economic Resources

The exercise of reserved treaty rights to fish is an important aspect of the historic, cultural, and religious environment of the Indian tribes of the Pacific Northwest. Opportunities to fish and the availability of fish have been very limited in recent years because fish populations have declined due to anthropogenic habitat modifications and natural environmental variability. The application of scientific resource management techniques to recovery of fish populations, including actions such as the artificial propagation program in place in the Imnaha River subbasin are essential to restoration of fish populations and fishing opportunities. The proposed fisheries would allow exercise of treaty rights not available under the No Action alternative.

Recreational fishing provides positive cultural and quality of life benefits to the non-tribal citizens of the rural northwest both as fishing opportunities and the non-consumptive enjoyment of wildlife resources. Recreational fishing also provides substantial income and important employment opportunities in remote, rural, communities located in the Snake River basin. The

proposed management actions described by the TRMP for 2003 are designed to provide fishing opportunities not possible under the No Action alternative, while still in a manner that does not appreciably reduce the likelihood that the listed anadromous salmon populations will continue to survive and recover.

Since 1978, harvest of chinook salmon by either Tribal or non-tribal fishermen has been allowed only for the past two years. For approximately 24 years, a generation of Tribal fishers was not able to exercise reserved treaty rights in the Imnaha River subbasin because there were very few fish and those few were allocated to natural spawning escapements and development of an artificial propagation brood stock in management actions designed to assist recovery and survival of the species. The state and Tribal co-managers initiated comprehensive conservation measures including complete closure of fisheries and development of the recovery broodstock 14 years before the species became listed under the ESA and came under Federal protection.

Similarly, a generation of non-tribal residents did not have the opportunity to fish and harvest salmon in the Imnaha River. Fishing, hunting, camping, and other outdoor pursuits are an integral part of the culture and lifestyle of residents of the rural northwestern United States. The ethical and cultural imperatives to hunt and fish and consume the harvest are still strong. The utilization of wild fish and game is also important in the economics of citizens where unemployment rates are high and traditional industries like logging and mining are in decline.

The fisheries proposed in the TRMP are small, contemplating the harvest of 418 fish more than under the No Action alternative. However, there are beneficial impacts on the human environment in terms of reestablished traditional Tribal fisheries in a place of historical and cultural importance to Tribal fishers. There are also benefits to the culture, lifestyle, and economy of non-tribal fishers and the residents of the Imnaha Basin. Because the fishery was closed for 24 years, it has been difficult to estimate the amount of angler effort or incidental camper and tourist participation that would be generated; however, after two years of limited open fishing opportunity, the level of participation and harvest is similar to the reported levels of the 1970s. It is likely that fishery effort may roughly approximate the 750 angler/days seen in 2001 and 2002, in which case approximately $48,000 more than under the No Action alternative might be expected to be generated as direct revenues, and another nearly $100,000 in revenue associated with the fisheries might accrue to the local economy. While the economic benefit of these limited activities to local communities and industries would be small in terms of the regional economy, the additional expenditures of fishermen as they pursue outdoor activities and utilize local services is an important source of new revenue into rural communities.

4.2.8 Environmental Justice

Executive Order 12898 (59 FR 7629) directs Federal agencies to identify and address, as appropriate, any disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. As under the No Action alternative, the

Proposed Action alternative would not be expected to affect human health of any population located in the action area.

Under the Proposed Action alternative, increased fishing opportunities may result as compared to the No Action alternative. These fishing opportunities would be available to all population segments. Tribal harvest and subsistence fishing opportunities, and potential opportunities for low-income persons could increase, but these communities would not be disproportionately affected compared to other communities.

4.2.9 Tribal Trust Responsibilities and Treaty Rights

The proposed action is consistent with the Federal government's treaty trust responsibility to the Nez Perce Tribe. Implementation of the tribal fisheries proposed in the TRMP is consistent with the reserved fishing rights provided by the treaties, the intent of the Tribal 4(d) Rule, Secretarial Order 3206 on Treaty Rights, and the continuing jurisdiction of Federal court under *U.S. v. Oregon*.

4.2.10 Cumulative Impacts

Cumulative impacts of NMFS' current proposed action under the Tribal 4(d) Rule would be minor if at all measurable. Incremental impacts on the environment are included in the discussion above. NMFS' 4(d) Rule is only one element of a large suite of regulations and environmental factors that may influence the overall management of fishery actions in the affected environment, and that may impact the health of listed salmon populations and their habitat. Those tribal programs that meet the requirements of the 4(d) Rule will include monitoring and adaptive management measures so that fishery managers can respond to changes in the status of affected listed salmon. Monitoring and adaptive management will help ensure that the affected ESUs are adequately protected and help counter-balance any negative cumulative impacts.

Other Federal, state, and tribal actions are expected to occur within or near the action area that would increase fish populations in the Columbia River basin. Federal actions for salmon recovery in the Columbia River basin that are currently underway include initiatives by the Northwest Power and Conservation Council. State initiatives include recently passed legislative measures to facilitate the recovery of listed species and their habitats, as well as the overall health of watersheds and ecosystems. Regional programs are being developed that designate priority watersheds and facilitate the development of the watershed management plans. Tribes have developed a joint restoration plan for anadromous fish in the Columbia River basin, known as the Wy-Kan-Ush-Mi Wa-Kish-Wit or Spirit of the Salmon plan. These planning efforts, in conjunction with the Proposed Action, are expected to help increase salmon and steelhead populations in the action area because of compatible goals and objectives. A healthy and self-sustaining Imnaha River chinook salmon population would be an important component in long-term recovery of the ESU as a whole.

5.0 Agencies Consulted

National Marine Fisheries Service
U.S. Fish and Wildlife Service
Oregon Department of Fish and Wildlife

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